

WHAT IS CLAIMED:

1. A method of treating a subject suffering from a cell-proliferative disorder comprising administering a therapeutically effective amount of an HDAC 11 inhibitor sufficient to treat
5 said subject.
2. A method of treating or preventing a disease or disorder associated with expression of mammalian HDAC 11 in a subject in need thereof, comprising the step of introducing a DNA molecule that is the antisense strand of an RNA sequence capable of producing a mammalian
10 HDAC 11 protein into a cell in the subject.
3. A short interfering nucleic acid (siRNA) molecule that down regulates expression of a mammalian HDAC 11 gene by RNA interference.
- 15 4. A method for reducing the expression of a target gene in a population of cells, the method comprising: introducing a double-stranded RNA molecule having a sequence complementary to the target gene or a portion thereof, wherein the target gene is mammalian HDAC 11.
- 20 5. The siRNA molecule of claim 3, wherein said siRNA molecule is adapted for use to treat a cell proliferative disorder, wherein said disorder is one of colon cancer, cervical cancer or lung cancer.
6. The siRNA molecule of claim 3, wherein said siRNA molecule comprises a sense region and an antisense region and wherein said antisense region comprises sequence
25 complementary to an RNA sequence encoding human HDAC 11 and the sense region comprises sequence complementary to the antisense region.
7. The siRNA molecule of claim 3, wherein said siRNA molecule is assembled from two nucleic acid fragments wherein one fragment comprises the sense region and the second
30 fragment comprises the antisense region of said siRNA molecule.
8. The siRNA molecule of claim 3, wherein said sense region and antisense region are covalently connected via a linker molecule.

9. A method for attenuating the expression of a target gene in a cell comprising: introducing the siRNA of claim 6 increased into the cell in an amount sufficient to attenuate expression of the target gene, wherein the sense and antisense regions comprise about 19-23 nucleotides, and wherein said antisense region of said siRNA comprises a sequences of nucleotides hat are substantially homologous to a region of the RNA sequence encoding human HDAC 11.

10. The method according to claim 9, wherein said region in siRNA comprises a sequences of nucleotides that are homologous to a sequence of nucleotides as set forth in SEQ ID NO:1.

11. The method according to claim 10, wherein said siRNA molecule comprises a sequences of nucleotides that are homologous to a sequence of nucleotides selected from the group consisting of nucleotides 513-531; 582-600; 1032-1050; and 1344-1362 of SEQ ID NO:1.

12. A method for the treatment of a cell proliferative disorder, the method comprising administering to a subject in need thereof an agent which inhibits the bioactivity of human HDAC 11 protein or an agent which decreases expression of an HDAC 11 encoding gene.

13. A method for inhibiting the growth or proliferation of a neoplastic cell, comprising contacting a tumor cell with an agent which inhibits the activity of HDAC 11 or decreases expression of a HDAC 11 encoding gene in an amount sufficient in induce cell-cycle arrest.

14. A method of screening for an agent which inhibits cell proliferative disorders, the method comprising testing a putative agent for the ability to inhibit HDAC 11 bioactivity or decrease expression of a HDAC 11 encoding gene.

15. The method according to claim 14, wherein the agent is selected from the group consisting of a RNAi construct targeted for silencing HDAC 11 gene expression, an HDAC 11 antisense oligonucleotide, a ribozyme targeted against HDAC 11, an antibody specific for HDAC 11, a ssDNA targeted against HDAC 11 dsDNA effective to form a triplex with the HDAC 11 dsDNA, or a chemical moiety effective to inhibit HDAC 11 function or activity.

16. The method according to claim 15, wherein said chemical moiety inhibits the function of said HDAC 11 protein by inhibiting the deacetylation activity attendant a native HDAC 11 protein.

17. The siRNA molecule of claim 3, wherein said siRNA molecule comprises a first sequence and a second sequence, wherein the first sequence comprises a sequence of nucleotides as set forth in one of SEQ ID NOs: 3-6 and the second sequence comprises a sequence of nucleotides as set forth in SEQ ID NOs: 7-10.

5